Code No: 155AY **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

DISTRIBUTED DATABASES

(Common to CSE, CSE(N))

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What are the properties of data processing?	[2]
b)	Write promises of DDBSs.	[3]
c)	What is query translation?	[2]
d)	Give the importance of localization of distributed data.	[3]
e)	List the types for deadlock avoidance in distributed system.	[2]
f)	Define serializability with examples.	[3]
g)	Write the advantages of parallel distributed database.	[2]
h)	Write short notes on fault-tolerance in distributed systems.	[3]
i)	Define inheritance.	[2]
j)	Write architectural issues of object database.	[3]

PART – B

(50 Marks)

2.a) Write and explain design strategies of distributed database design.
b) Why we need to have distributed databases, and distinguish the features of distributed databases with centralized databases. [5+5]

OR

3.a) Draw and explain distributed database management system architecture.
b) Illustrate allocation methods for distributed database design. [5+5]

4.a) Discuss in detail about distributed query optimization algorithms.
b) How is distributed grouping and aggregate function evaluation done? [5+5]

OR

5.a) Discuss in detail about objectives of Query Processing.
b) Describe characterization of query processors. [5+5]

6.a) Differentiate between centralized 2PL protocol and Distributed 2PL protocol.
b) List and explain types of transactions with suitable diagrams. [5+5]

OR

7.a) Elaborate Distributed Deadlock detection for distributed database systems.
b) Explain optimistic concurrency control algorithms. [5+5]

8.a) List and discuss various types of failures in distributed DBMS.
b) Discuss in detail about reliability concept and majors. [5+5]

OR

9.a) Differentiate between local and distributed reliability protocol.
b) Explain general architecture of a parallel database system and shared memory architecture. [5+5]

10.a) Describe in detail cache consistency and object identifier management in object management.
b) Discuss architectural issues in distributed object DBMS. [5+5]

OR

11.a) Compare OODBMS and ORDBMS.
b) Discuss in detail about persistent programming languages. [5+5]

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